

RF Exposure Report

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Test Model: DWL-8710AP

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Release Control Record

Issue No.	Description	Date Issued
SA150825C34	Original release	Nov. 05, 2015

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 24cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	28.73	7.93	24	0.640	1
5180-5240	20.77	9.93	24	0.162	1
5745-5825	23.77	9.93	24	0.324	1

Note:

2412-2462MHz Directional gain = $4.92\text{dBi} + 10\log(2) = 7.93\text{dBi}$

5180-5240MHz Directional gain = $6.92\text{dBi} + 10\log(2) = 9.93\text{dBi}$

5745-5825MHz Directional gain = $6.92\text{dBi} + 10\log(2) = 9.93\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots\text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$\text{WLAN } 2.4\text{GHz} + \text{WLAN } 5\text{GHz} = 0.640 + 0.324 = 0.964$

Therefore all the maximum calculations of above situations are less than the "1" limit.

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